In the Claims

Please amend the claims as follows:

1. (Currently Amended) An optical communication device, comprising:

a plurality of integrated modules operable to transmit and receive a plurality of optical signal wavelengths, at least one of the plurality of integrated modules comprising:

one or more transmitters each operable to generate at least one of the plurality of optical signals ~~an optical signal~~ and to modulate information onto the at least one of the plurality of optical signals ~~optical signal~~ to form a modulated optical output signal, each modulated optical output signal comprising a first optical signal wavelength; and

one or more receivers each operable to receive an input optical signal, each input optical signal comprising a second optical signal wavelength, wherein each first optical signal wavelength is different than each second optical signal wavelength;

a wavelength division multiplexer coupled to at least some of the plurality of integrated modules ~~one or more transmitters~~ and coupled to an optical splitter, the wavelength division multiplexer operable to combine the modulated output optical signal ~~signals~~ and at least another of the plurality of optical signal wavelengths into a multiple wavelength output optical signal for communication to the optical splitter, wherein the optical splitter comprises a power splitter that separates the multiple wavelength output optical signal into a plurality of multiple wavelength output optical signals, each of the plurality of output optical signals comprising a substantially similar set of wavelengths; and

a controller coupled to at least some of the plurality of integrated modules, the controller operable to generate a control signal based at least in part on a scheduling algorithm and to communicate the control signal to the at least some of the plurality of integrated modules, wherein the at least some of the plurality of integrated modules use the control signal to reduce contention between the plurality of integrated modules.

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Original) The optical communication device of Claim 1, further comprising an optical signal separator operable to receive a multiple wavelength optical input signal and to separate that signal into a plurality of optical input wavelength signals.

8. (Previously Presented) The optical communication device of Claim 7, wherein at least one of the plurality of optical input signal wavelengths comprises a packet comprising an identifier associated with a destination element external to the optical communication device.

9. (Original) The optical communication device of Claim 8, wherein the packet comprises an Internet Protocol (IP) packet or a Transmission Control Protocol (TCP) packet.

10. (Original) The optical communication device of Claim 8, wherein the packet comprises a Multi Protocol Label Switching (MPLS) or a Generalized Multi Protocol Label Switching (GMPLS) packet.

11. (Currently Amended) The optical communication device of Claim 7, wherein the separator is a device selected from the group consisting of a wavelength division demultiplexer, a waveguide grating router, and an arrayed waveguide grating.

12. (Cancelled)

13. (Previously Presented) The optical communication device of Claim 1, wherein the transmitter includes at least one light source selected from the group consisting of fixed wavelength lasers and tunable lasers.

14. (Previously Presented) The optical communication device of Claim 1, wherein the transmitter includes at least one light source selected from the group consisting of laser diodes and light emitting diodes.

15. (Cancelled)

16. (Cancelled)

17. (Original) The optical communication device of Claim 1, wherein the optical communication device comprises a router.

18. (Currently Amended) An optical communication device, comprising:

a plurality of integrated modules operable to communicate a multiple wavelength output optical signal, each of the plurality of integrated modules operable to receive at least some of a plurality of optical signal wavelengths and to generate at least one wavelength of a multiple wavelength output optical signal, each of the plurality of integrated modules comprising:

an optical signal separator operable to separate an input optical signal from the plurality of optical signal wavelengths received by the integrated module~~, the input optical signal comprising a first optical signal wavelength~~;

a receiver coupled to the optical signal separator, the receiver operable to receive the input ~~first~~ optical signal ~~wavelength~~ and to convert at least a portion of the input ~~first~~ optical signal ~~wavelength~~ into an electronic signal; and

an optical transmitter operable to generate an optical signal and to modulate information onto the optical signal to form a modulated optical output signal, the modulated optical output signal comprising ~~a second optical~~ an optical signal wavelength that ~~, wherein the first optical signal wavelength~~ is different than an optical signal wavelength ~~the second optical signal wavelength~~ of the input optical signal; ~~signals;~~

an optical splitter coupled to at least some of the plurality of integrated modules, wherein the optical splitter comprises a power splitter ~~that receives~~ operable to receive at least some of the multiple ~~a multiple~~ wavelength output optical signal and ~~separates~~ to separate the multiple wavelength output optical signal into a plurality of multiple wavelength output optical signals, each of the plurality of output optical signals comprising a substantially similar set of wavelengths; and

a controller coupled to at least some of the plurality of integrated modules, the controller operable to generate a control signal based at least in part on a scheduling

algorithm and to communicate the control signal to the at least some of the plurality of integrated modules, wherein the at least some of the plurality of integrated modules use the control signal to reduce contention between the plurality of integrated modules.

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Previously Presented) The optical communication device of Claim 18, wherein at least one of the plurality of optical input signal wavelengths comprises a packet comprising an identifier associated with a destination element external to the optical communication device.

25. (Original) The optical communication device of Claim 24, wherein the packet comprises an Internet Protocol (IP) packet or a Transmission Control Protocol (TCP) packet.

26. (Cancelled)

27. (Previously Presented) The optical communication device of Claim 18, wherein the separator is a device selected from the group consisting of a wavelength division demultiplexer, a waveguide grating router, and an arrayed waveguide grating.

28. (Cancelled)

29. (Cancelled)

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

33. (Previously Presented) The communication device of Claim 18, wherein the optical transmitter comprises a light source operable to generate at a specified wavelength, and wherein the light source is selected from the group consisting of fixed wavelength lasers and tunable lasers.

34. (Previously Presented) The communication device of Claim 18, wherein the optical transmitter comprises a light source operable to generate at a specified wavelength, and wherein the light source is selected from the group consisting of laser diodes and light emitting diodes.

35. (Original) The communication device of Claim 18, further comprising a combiner operable to receive each of the optical output wavelength signals and to generate a multiple wavelength output optical signal.

36. (Previously Presented) An optical communication system, comprising:

a first integrated module that generates a first output signal comprising a first optical signal wavelength, the first integrated module coupled to an optical distribution network comprising one or more optical power splitters, at least some of a first one or more of the optical power splitters receive the first output signal and separate the first output signal into a plurality of first output optical signals, each of the plurality of first output optical signals comprising a substantially similar set of wavelengths;

a second integrated module that generates a second output signal comprising a second optical signal wavelength, the second integrated module coupled to the optical distribution network comprising the one or more optical power splitters, wherein the second integrated module receives at least one of the plurality of first output optical signals and wherein at least the second integrated module comprises:

an optical signal separator operable to separate the first optical signal wavelength from one or more optical signal wavelengths received by the second integrated module;

one or more receivers operable to receive the first optical signal wavelength and to convert at least a portion of the first optical signal wavelength into an electrical signal; and

one or more transmitters each operable to generate the second output optical signal at the second optical signal wavelength and to modulate information onto the second output optical signal, wherein the first optical signal wavelength is different than the second optical signal wavelength; and

a controller coupled to the first and second integrated modules, the controller operable to generate a control signal based at least in part on a scheduling algorithm and to communicate the control signal to at least the first and second integrated modules, wherein the first and second integrated modules use the control signal to reduce contention within the optical communication system.

37. (Cancelled)

38. (Cancelled)

39. (Cancelled)

40. (Cancelled)

41. (Previously Presented) The optical communication system of Claim 36, wherein the first optical signal wavelength comprises a packet comprising an identifier associated with a destination element external to the optical communication system.

42. (Cancelled)

43. (Previously Presented) The optical communication system of Claim 36, wherein at least some of the one or more transmitters comprise one or more light source that are selected from the group consisting of laser diodes and light emitting diodes.

44. (Cancelled)

45. (Cancelled)

46. (Cancelled)

47. (Previously Presented) The optical communication system of Claim 36, further comprises a look up table operable to facilitate generation of at least a first control signal based at least in part on an identifier.

48. (Previously Presented) The optical communication device of Claim 1, further comprising a filter to separate the input optical signal from a multiple wavelength signal received by the integrated module, wherein the filter separates the input optical signal based at least in part on the control signal generated by the controller.

49. (Previously Presented) The optical communication device of Claim 1, further comprising an optical amplifier operable to amplify at least some of the optical signals generated by the one or more transmitters.

50. (Previously Presented) The optical communication device of Claim 1, wherein the modulated optical output wavelength signal comprises a time division multiplexed optical signal.

51. (Previously Presented) The optical communication device of Claim 1, wherein the input optical signal comprises a time division multiplexed optical signal.

52. (Previously Presented) The optical communication device of Claim 1, wherein the splitter separates the multiple wavelength output optical signal into sixteen (16) or more outgoing signals.

53. (Previously Presented) The optical communication device of Claim 1, further comprising a communication link comprising one or more single mode optical fibers.

54. (Previously Presented) The communication device of Claim 1, further comprising a control network that couples the controller to the at least some of the plurality of integrated modules, wherein the control network comprises an Ethernet network.

55. (Previously Presented) The optical communication device of Claim 1, wherein the scheduling algorithm comprises a round robin scheduling algorithm.

56. (Previously Presented) The optical communication device of Claim 18, wherein the optical signal separator comprises a filter, and wherein the filter separates the input optical signal from the plurality of optical signal wavelengths based at least in part on the control signal generated by the controller.

57. (Previously Presented) The optical communication device of Claim 18, wherein the integrated module comprises a plurality of optical transmitters.

58. (Previously Presented) The optical communication device of Claim 18, further comprising an optical amplifier operable to amplify at least some of the multiple wavelength output signals received by the plurality of integrated modules.

59. (Previously Presented) The optical communication device of Claim 18, wherein the modulated output optical signal comprises a time division multiplexed signal.

60. (Previously Presented) The optical communication device of Claim 18, wherein the input optical signal comprises a time division multiplexed signal.

61. (Previously Presented) The optical communication device of Claim 18, wherein the splitter separates the multiple wavelength output optical signal into sixteen (16) or more outgoing signals.

62. (Previously Presented) The optical communication device of Claim 18, further comprising a communication link comprising one or more single mode optical fibers.

63. (Previously Presented) The optical communication device of Claim 18, further comprising a control network that couples the controller to the at least some of the plurality of integrated modules, wherein the control network comprises an Ethernet network.

64. (Previously Presented) The optical communication device of Claim 18, wherein the scheduling algorithm comprises a round robin scheduling algorithm.

65. (Previously Presented) The optical communication device of Claim 18, wherein the integrated module comprises a plurality of receivers.

66. (Previously Presented) The communication device of Claim 35, wherein the combiner is selected from the group consisting of a wavelength division multiplexer and a power combiner.

67. (Currently Amended) The optical communication system of Claim 36, wherein at least some of a second one or more optical power splitters receive the second output signal and separate the second output signal into a plurality of second output optical signals, each of the plurality of second output optical signals comprising a substantially similar set of wavelengths, and wherein the ~~input~~ first integrated module receives at least one of the plurality of second output optical signals.

68. (Previously Presented) The optical communication system of Claim 36, wherein the optical signal separator comprises a filter, and wherein the filter separates the first optical signal wavelength from the one or more optical signal wavelengths based at least in part on the control signal generated by the controller.

69. (Previously Presented) The optical communication system of Claim 36, wherein the first output signal is time division multiplexed.

70. (Previously Presented) The optical communication system of Claim 36, wherein the second output signal is time division multiplexed.

71. (Previously Presented) The optical communication system of Claim 36, further comprising a communication link comprising one or more single mode optical fibers.

72. (Previously Presented) The optical communication system of Claim 36, further comprising a control network that couples the controller to the at least some of the plurality of integrated modules, wherein the control network comprises an Ethernet network.

73. (Previously Presented) The optical communication system of Claim 36, further comprising an optical amplifier operable to amplify one or more optical signal wavelengths received by the second integrated module.

74. (Previously Presented) The optical communication system of Claim 36, wherein the scheduling algorithm comprises a round robin scheduling algorithm.